

CLAIMS

What is claimed is:

1. A stimulating lead system comprising:
a body defining a lumen;
a distal tip of the body defining a through-hole;
at least one electrode positioned distally on the body; and
at least one conductor disposed in the body providing electrical connection to the at least one electrode,
wherein the at least one conductor forms a winding surrounding the lumen, and
wherein the through-hole and lumen allow passage of at least a microelectrode, and
wherein the distance between the distal end of the microelectrode and the distal end of the lead is variable.
2. The lead system of Claim 1, wherein the through-hole and lumen allow passage of the microelectrode, wherein the microelectrode comprises an independently slidable microelectrode wire within an independently slidable electrode tube.
3. The lead system of Claim 1 further comprising a protective tube disposed in the lumen defined by the body.
4. The lead system of Claim 3 wherein the protective tube is self-aligning.
5. The lead system of Claim 1, wherein the distal tip comprises an electrode.
6. The lead system of Claim 1, wherein the distal tip comprises an insulating material.

7. A stimulating lead system comprising:
an isodiametric body defining at least one lumen, wherein each lumen allows passage of only a conductor;
a distal tip of the body, which tip is solid;
at least one electrode positioned distally on the body; and
at least one conductor providing electrical connection to the at least one electrode, wherein the at least one conductor comprises a cable.
8. The lead system of Claim 7, wherein the distal tip comprises an electrode.
9. The lead system of Claim 7, wherein the distal tip comprises an insulating material.
10. A stimulating lead system comprising:
a body defining at least one lumen;
a distal tip of the body;
at least one electrode located on the body, proximal to the tip; and
at least one conductor providing electrical connection to the at least one electrode,
wherein the body further comprises a stability feature proximal to the at least one electrode and further comprises a stability feature distal to the at least one electrode, and
wherein the lumen allows passage of at least a stylet used to straighten the body during insertion of the lead.
11. The lead system of Claim 10, wherein the distal tip comprises an electrode.
12. The lead system of Claim 10, wherein the distal tip comprises an insulating material.

13. A lead introduction system comprising:
a first cannula that remains external to the body and is held in a substantially fixed position; and
a second cannula slidable within the first cannula and having a proximal end extending beyond the proximal end of the first cannula and a distal end extending beyond the distal end of the first cannula and into the body,
wherein the second cannula is supported by the first cannula; and
wherein at least a lead is insertable through the second cannula.
14. The lead introduction system of Claim 13 further comprising a stereotactic frame, wherein the first cannula is held in a substantially fixed position by the stereotactic frame.
15. The lead introduction system of Claim 13 wherein the second cannula includes macroelectrodes.
16. A method of introducing a lead comprising:
holding a first cannula in a substantially fixed position external to the body;
slidably supporting a second cannula with the first cannula;
positioning the second cannula with a proximal end extending beyond the proximal end of the first cannula and a distal end extending beyond the distal end of the first cannula and into the body; and
inserting at least a lead through the second cannula.
17. The method of Claim 16 further comprising using a stereotactic frame to hold the first cannula in a substantially fixed position.
18. The method of Claim 16 further comprising using the second cannula as a macroelectrode.

19. A method of implanting a brain stimulating lead, consisting essentially of:
identifying a theoretical target for brain stimulation;
creating a point of entry into the brain;
inserting a lead and a microelectrode into the brain to a position above
the theoretical target;
advancing the microelectrode toward the theoretical target to locate a
stimulation target;
advancing the lead to the stimulation target located by the
microelectrode;
performing test stimulation with the lead to confirm location of the
stimulation target;
removing the microelectrode; and
securing the lead.

20. The method of Claim 19 wherein the lead comprises at least one stability
feature.

21. The method of Claim 19 wherein inserting the lead and the
microelectrode comprises:
holding a first cannula in a substantially fixed position external to the
body;
slidably supporting a second cannula with the first cannula;
positioning the second cannula with a proximal end extending beyond the
proximal end of the first cannula and a distal end extending beyond the distal end of the
first cannula and into the body; and
inserting the lead and the microelectrode through the second cannula.

22. The method of Claim 19 wherein at least one of identifying the theoretical
target, creating the point of entry, inserting the lead and the microelectrode, advancing
the microelectrode, and advancing the lead comprises using a stereotactic frame.